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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,132	02/04/2004	Viktor Kanarov	VII/17US	4276
26875	7590	02/28/2006	EXAMINER	
WOOD, HERRON & EVANS, LLP 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202			ALEMU, EPHREM	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/772,132

Applicant(s)

KANAROV ET AL.

Examiner

Ephrem Alemu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,10-13 and 15-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-08-05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claims 1 and 12, the phrase "may be" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). The office suggests replacing "may be" with --is--.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 5/2, 10, 11, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeng et al. (US 6,451,161) in view of Koshimizu (US 6,162,323).

Re claims 2, 5/2, 10, 13, 15 and 16, Jeng discloses plasma processing apparatus including an ion source for bombarding a substrate (Fig. 5, 7, 8), comprising

an evacuated chamber (10) for containing a plasma (Figs. 5, 7),

a radio frequency source (28) for exciting the plasma using radio frequency energy,

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a re-entrant vessel (i.e., plural dielectric windows 20'A to 20'E) positioned within the chamber to shape and make more uniform said plasma contained within the chamber (Fig. 7; abstract; Col. 1, lines 6-10; Col. 9, lines 11-20; Col. 10, lines 7-40), and

one or more magnets (i.e., induction coils 32), positioned within the re-entrant vessel (i.e., plural dielectric windows 20'A to 20'E extending toward the wafer 50) (Figs. 7, 8; abstract; Col. 9, lines 15-20; Col. 10, lines 7-40; wherein the re-entrant vessel (i.e., plural dielectric windows 20'A to 20'E extending toward the wafer 50) is not evacuated).

Jeng does not disclose an optical grid within the chamber having a plurality of apertures of the optical grid to bombard the substrate.

In the same field of endeavor, Koshimizu teaches of providing an optical grid (i.e., grid electrode 128) having a plurality of apertures (129) within a processing chamber (102) for the purpose of dividing the processing chamber into a plasma generating space and a processing space to allow a change in conductance with respect to a gas flow flowing between the plasma generating space and the processing space (Fig. 1; Col. 3, lines 10-18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jeng's plasma processing apparatus by providing an optical grid (i.e., grid electrode 128) within a processing chamber (102) as taught by Koshimizu for the purpose of dividing the processing chamber into a plasma generating space and a processing space to allow a change in conductance with respect to a gas flow flowing between the plasma generating space and the processing space.

Re claim 11, Jeng further shows the re-entrant vessel (i.e., plural dielectric windows 20'A to 20'E) is movable within the chamber in at least a first direction (i.e., in height) to adjust the plasma uniformity (abstract; Col. 1, lines 6-10).

***Allowable Subject Matter***

6. Claims 1, 4, 5/1 and 17 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

7. Claim 12 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. Claims 3 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to teach or suggest, alone or in combination, the limitations: "further comprising an actuator for moving the magnets" as claimed in claim 3 and 14.

***Response to Arguments***

10. Applicant's arguments filed on 11-28-05 have been fully considered but they are not persuasive. In response to applicant argument Jeng does not show an ion source is respectfully disagreed. Although, Jeng does not show an optical grid as part of the apparatus, Koshimizu teaches of providing an optical grid (i.e., grid electrode 128) having a plurality of apertures (129) within a processing chamber (102) for the purpose of dividing the processing chamber into a plasma generating space and a processing space to allow a change in conductance with respect to

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a gas flow flowing between the plasma generating space and the processing space (Fig. 1; Col. 3, lines 10-18).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Jeng's plasma processing apparatus by providing an optical grid (i.e., grid electrode 128) within a processing chamber (102) as taught by Koshimizu for the purpose of dividing the processing chamber into a plasma generating space and a processing space to allow a change in conductance with respect to a gas flow flowing between the plasma generating space and the processing space.

***Remarks***

11. The 6,451,161 reference listed in the IDS had been cited by the examiner in the notice of reference cited by the examiner mailed to applicant on 6-27-05.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA  
2-16-06



**TUYET VO**  
**PRIMARY EXAMINER**